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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,500	01/10/2002	Tomoyuki Fujii	791_182	9278

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EXAMINER

KITOV, ZEEV

ART UNIT PAPER NUMBER

2836

DATE MAILED: 06/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/044,500

Applicant(s)

FUJII ET AL.

Examiner

Zeev Kitov

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Objection

1. Claims 1 and 5 are objected due to following misspellings. In Claim 1, line 6, the word “boding” should be retyped as “bonding”; in Claim 5, line 5, the word boding should be retyped as “bonding”.

In Claim 5, line 11, the statement should be retyped as follows: “and each of the most outer bonding layers”.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being anticipated by Matsunaga (US 6,256,187). Matsunaga discloses all the elements of Claim 1 including an electrostatic chuck having a bonded structure comprising a ceramic electrostatic chuck member (element 22 in Fig. 1, col. 4, lines 1 – 18), a metal member (element 12 in Fig. 1), and a first and second bonding layers (elements 20 and 14 in Fig. 1); the first bonding layer is being bonded to the ceramic chuck, the second bonding layer is bonded to the metal member (element 12 in Fig. 1); it further discloses a polyimide layer (element 14 in Fig. 1, col. 6, lines 3-16) being disposed between said first and second most outer bonding layers.

It further discloses a structure of an adhesive sheet (Fig. 7, col. 8, lines 53 – 67, col. 9, lines 1 – 21), which includes polyimide film (element 14 in Fig. 7) sandwiched between two external layers (elements 42 in Fig. 7). These external layers include silicone resin (col. 9, lines 16 – 21).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga in a view of Court Decision In re Aller, 105 USPQ 233. As was stated above, Matsunaga discloses all the elements of Claim 1.

However, regarding Claim 2, it does not disclose a particular thickness of the bonding layer recited in the claim. The Court Decision addresses this issue stating that discovering the optimum or workable ranges does not represent a novelty or an innovative step. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the bonding layers with particular thickness, because as Court Decision states, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

As to Claim 4, the same considerations given above with regard to Claim 2 rejections are applicable.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga in a view of Parkhe (US 5,909,355). As was stated above, Matsunaga discloses all the elements of Claim 1. However, regarding Claim 3, it does not disclose a base material made of aluminum nitride and being sintered with an electrostatic chuck electrode. Parkhe discloses the electrostatic chuck having a base material made of aluminum nitride (element 206 in Fig. 3) and being sintered with an electrostatic chuck electrode (col. 3, lines 53 –67 and col. 4, lines 1 – 35). Both patents have the same problem solving area, namely design of the electrostatic chucks. Therefore, it would

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have been obvious to one of ordinary skill in the art at the time the invention was made to have used the aluminum nitride ceramic, which is sintered with an electrostatic chuck electrode according to Parkhe in the electrostatic chuck of Matsunaga, because according to Parkhe (col. 1, lines 44 – 67, col. 2, lines 1 –13), this will resolve a problem of reduced ceramic resistivity at high temperatures.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga in a view of McMillin et al. (US 5,835,334). As was stated above, Matsunaga discloses all the elements of Claim 1. However, regarding Claim 4, it does not disclose a value of flatness of an adsorption surface in the electrostatic chuck as being 30 μm or less. McMillin discloses the flatness as being of 0.001 inches, which is slightly smaller than a value of 30 μm cited in the claim. Both patents have the same problem solving area, namely design of the electrostatic chucks. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used ceramic material with the flatness of 0.001 inch according to McMillin et al. in the electrostatic chuck of Matsanuga, because as McMillin states (col. 4, lines 30 – 36), the coating should be non-porous and provide an electrical voltage breakdown strength of at least 500 volts/mil. As well known in the art, reduction in a degree of a surface flatness increases the voltage breakdown value.

6. As per Claim 5, in addition to the limitations of Claim 1 rejected accordingly, it includes limitations of a device manufacturing process. Therefore Claim 5 is rejected

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under 35 U.S.C. 103(a) as being unpatentable over Matsunaga in a view of Court Decision In re Aller, 105 USPQ 233 and further in a view of Weldon et al. (US 6,108,189). Weldon et al. discloses a manufacturing process of a composite dielectric member having a polyimide as one of its layers (col. 23, lines 20 – 25). The disclosed manufacturing process includes placing of multiplayer structure into a vacuum-packing bag (col. 23, lines 63 – 65) and heating the vacuum-packed dielectric member under isotropic (isostatic) pressure (col. 23, lines 65 – 67). Both patents have the same problem solving area, namely design of electrostatic chucks. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the manufacturing process according to Weldon et al. for manufacturing of the electrostatic chuck of Matsunaga, because as Weldon et al. states (col. 23, lines 40 – 46), the composite dielectric member can be manufactured by a variety of conventional methods including isostatic pressing thermal spraying, sputtering, CVD, PVD, solution coating, or sintering a ceramic block with the embedded electrode. The thermal isostatic pressure is one of the methods. A selection of particular method is up to the designer according to his secondary specification requirements.

Conclusion

The prior art made of record not relied upon is considered pertinent to applicant's disclosure: US 5,745,331, US 5,870,271, US 6,482,761, US 5,867,359, US 5,754,391.

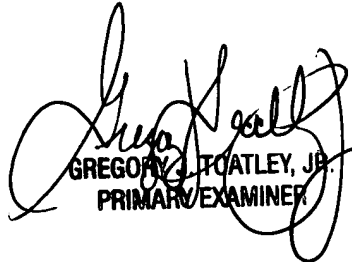
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zeev Kitov whose telephone number is (703) 305-0759.

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The examiner can normally be reached on 8:00 – 4:30. If attempts to reach examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (703) 308-3119. The fax phone numbers for organization where this application or proceedings is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Z.K.
05/26/2003


GREGORY L. TOATLEY, JR.
PRIMARY EXAMINER